

Grand Challenge Status

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Slides prepared by D. Olson

30 Mar 1998

RCF Meeting

BNL

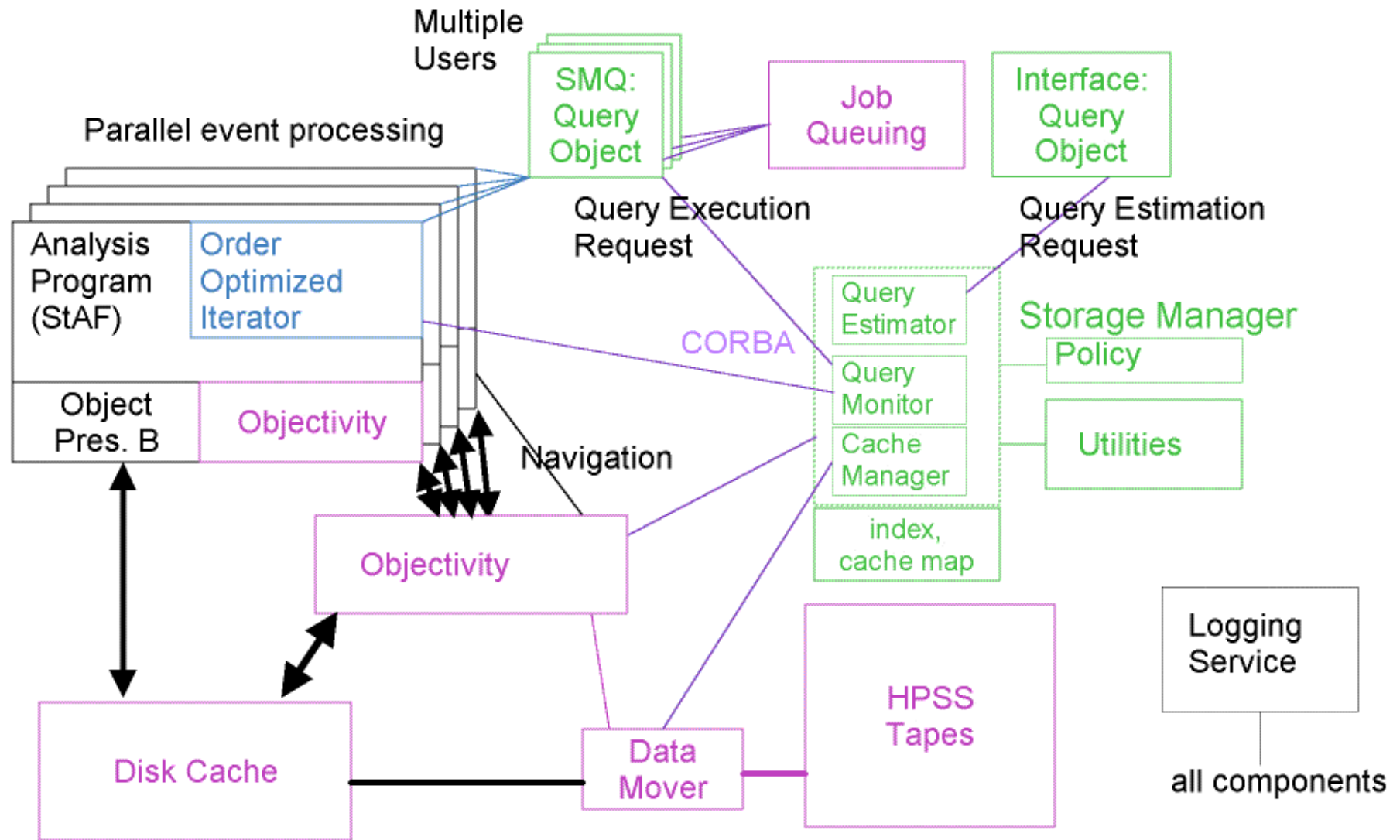
<http://www-rnc.lbl.gov/GC/>

<http://www-rnc.lbl.gov/GC/plan/dec97/description.htm>

Outline

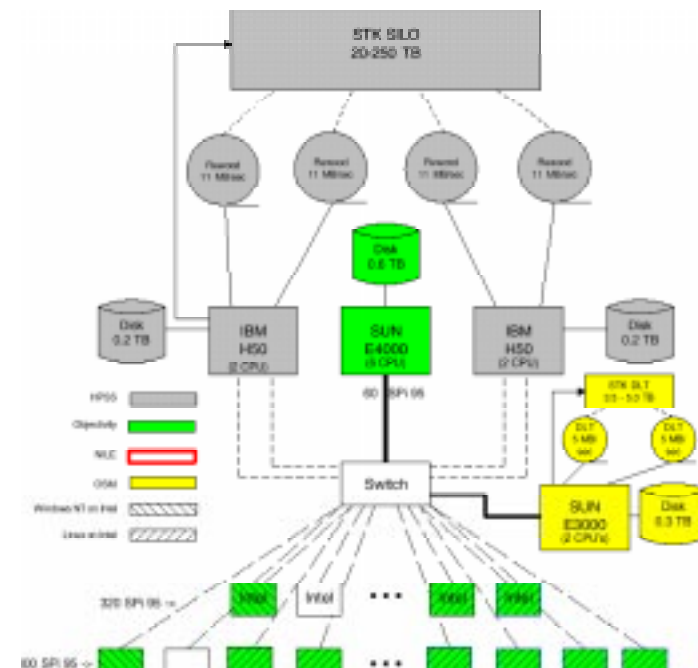
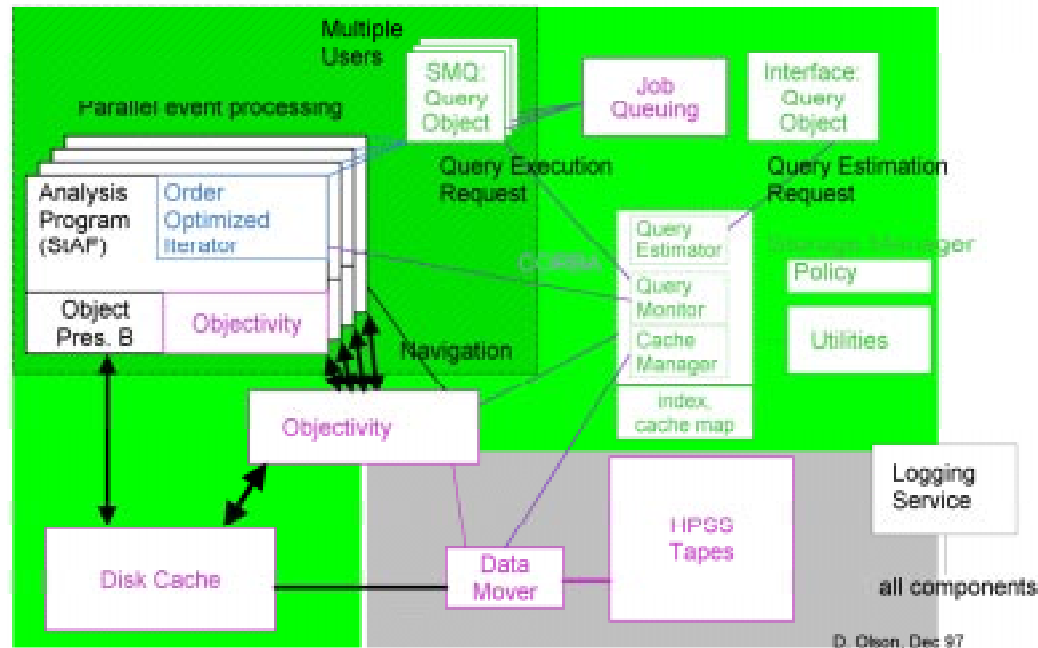
- Architecture
- Assumptions of event storage model
- Implementation Plan
- Present status
- MDC1 goals

RHIC Analysis Architecture



D. Olson, Dec 97

GC Components in RCF



Assumptions about Event Model

- Each event has: (Objectivity implementation)
 - identifier
 - OID of event header object
 - multiple named components (raw, hits, tracks, ...),
a given component for one event exists in one file
 - each component has top level object used for finding the whole component
 - tag info for each component
 - a tag object in the tagDB with attributes

Assumptions (cont.)

- You know how to:
 - retrieve event components with event identifier & component name
 - specify files given event identifier & component name
 - provide tag info through interface to query estimator

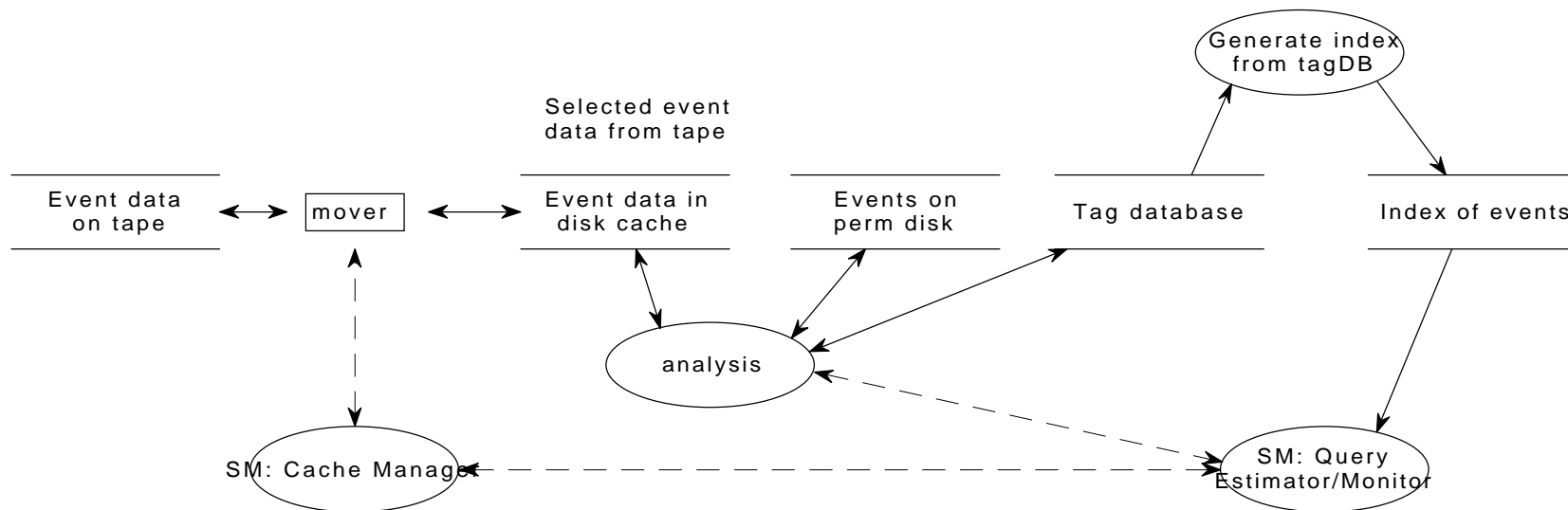
GC Features 1

- The grand challenge project is concerned primarily with the tape-disk interaction. The basic mechanism is:
 - convert event list (object list) to set of files containing those events
 - pre-stage those files to disk cache
 - return sub-lists corresponding to cached files to multiple processes for parallel analysis.

GC Features 2

- Provide monitoring information so that disk & tape level clustering effectiveness can be evaluated.
- Tools to reorganize data if warranted.
- Query estimation to determine number of events, files, and amount of time for an analysis job before execution.

Data Flow View



OMT, RA1
29 Mar 98

Technologies

- CORBA (Orbix for Storage Manager, Omnibroker for analysis programs)
- Objectivity
- StAF
- MPI (probably)
- (P)FTP

Present status

- Prototype query object, query estimator, query monitor, cache manager, tagDB, order-optimized iterator
 - interfaces being finalized
 - integration at LBNL: 4/15 - 5/15
 - integration at BNL: 5/15 - 6/5
- Include StAF by 6/1

Connections to Other Activities

- BaBar
 - Dave Zimmerman looking at BaBar Objy code
- RD45
 - Dave Malon is long time RD45 participant
 - Dave Zimmerman going RD45 mtg, etc.
- Objectivity, Inc.
 - Discussing issues with Brian Clark, Glen Finston
(see http://www-rnc.lbl.gov/GC/meetings/phone/980319/objectivity_issues.htm)

Open, Active Questions

- Event header & tag classes
- CORBA interface: tagDB - query estimator
- EventID/component name
- Cache management implementation with ftp & Objectivity/DB
 - Objectivity-HPSS via AMS may be AMS/PFTP

MDC-1 Implementation

- Assumed event model
 - multi-component model, but utilizing single component initially
- Components:
 - query object, query estimator, query monitor, cache manager, policy module, order optimized iterator (1 per query execution)